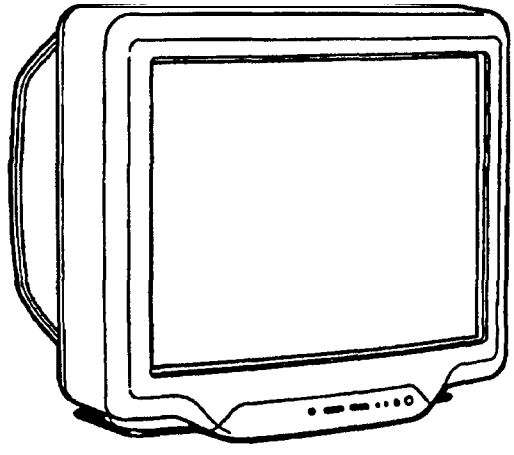
KV-27EXR95
RM-Y111

SERVICE MANUAL

US Model
Chassis No. SCC-D50K-A

Canadian Model
Chassis No. SCC-D61 E-A



ANU-2 CHASSIS

MODELS OF THE SAME SERIES	
KV-27EXR95	
KV-27EXR90	

SPECIFICATIONS

Television system American TV standards
Channel coverage VHF: 2 – 13
UHF: 14 – 69
Cable TV: 1 – 125
Picture tube Microblack™ Trinitron® tube
27-inch picture measured diagonally
28-inch picture tube measured diagonally
Antenna 75-ohm external anlenna terminal for VHF/UHF
Input VIDEO 1 and 2 IN
S VIDEO IN (4-pin mini DIN)
Y: 1 Vp-p, 75-ohms unbalanced, sync negative
C: 0.286 Vp-p (Burst signal), 75-ohms
Video (phono jacks): 1 Vp-p, 75-ohms unbalanced, sync negative
Audio (phono jacks): 500 mVrms (100% modulation)
Impedance: 47 kilohms
output VIDEO 2 OUT
Video (phono jack): 75-ohms unbalanced, sync negative
Audio (phono jacks):
Impedance: 10 kilohms
AUDIO OUT (VARIABLE) (phono jacks)
More than 408 mVrms at the maximum volume setting (variable)
Impedance: 5 kilohms

Speaker output 5 W × 2
Power requirements 120 V AC, 60 Hz
Power consumption Maximum: 165 W
Standby: 1.5 W
Dimensions (h/w/d) 595 × 683 × 573.5 mm (23⅝ × 27 × 22⅝ inch)
Supplied accessories
Remote Commander RM-Y111 (1) with 2 size AA (R6) EVEREADY batteries
Terminal cover (1)
Recommended accessories
U/V mixer EAC-66
Connecting cable VMC-810/820S, YC-15V/30V
SPEAKER SIZE TWEETER 50mm X2 (2")
WOOFER 85mm X2 (3 3/8")
TOTAL 2 SPEAKER BOXES
INTERNAL AUDIO POWER
FRONT 5 WATTS X 2
CONDITION 8 ohms, 10% T.H.D
AUDIO FREQUENCY RESPONSE
TWEETER 2kHz – 20kHz
WOOFER 50Hz -2kHz
CONDITION BASS/TREBLE ARE IN NORMAL CONDITION

Design and specifications are subject to change without notice.

MICROFILM

TRINITRON® COLOR TV
SONY®

SECTION 5
CIRCUIT ADJUSTMENTS

5-I. ELECTRICAL ADJUSTMENT BY REMOTE COMMANDER

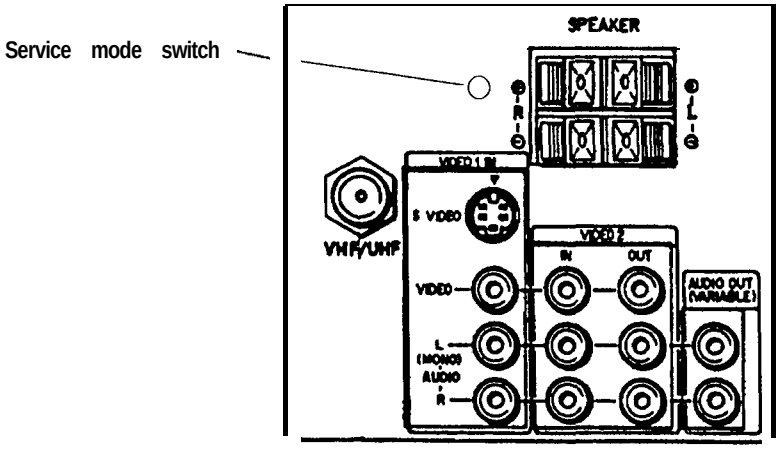
Use of Remote Commander (RM-Y 111) can be performed circuit adjustments about this model.

1. METHOD OF SETTING THE SERVICE MODE

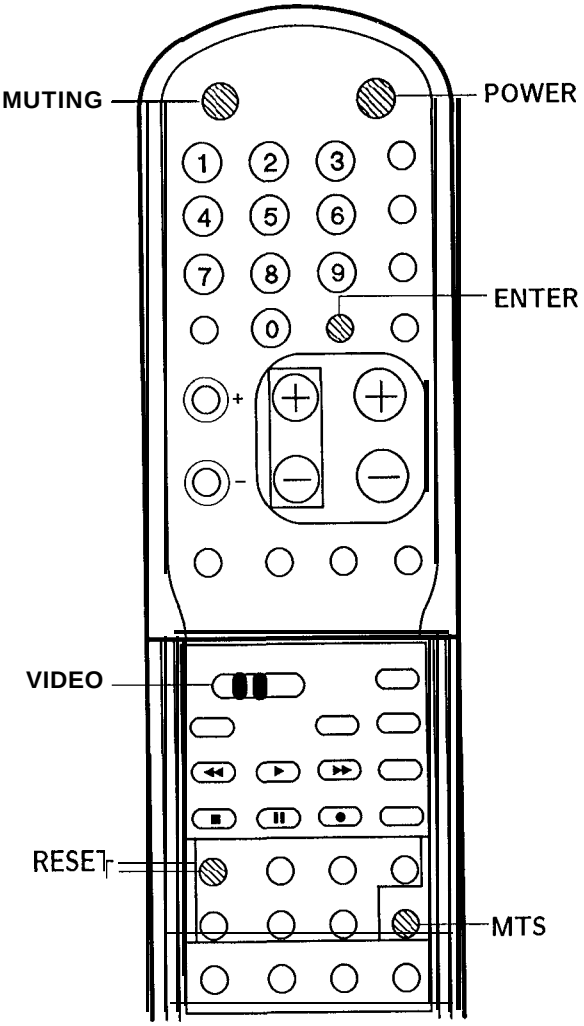
1) Press POWER button on the Remote Commander while pressing switch on the rear of the set.

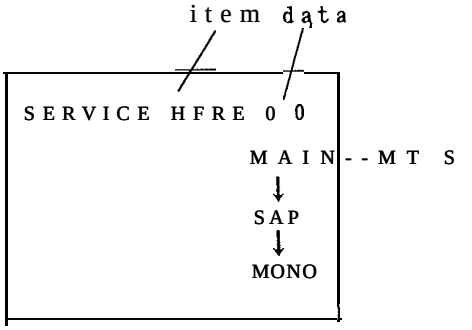
NOTE : Test Equipment Required.

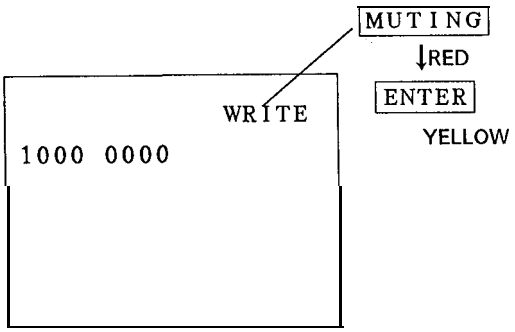
1. Pattern Generator
2. Frequency counter
3. Digital multimeter
4. Audio OSC



2. ADJUST BUTTONS AND INDICATOR







3. AN ITEM OF ADJUSTMENT

ITEM	EFERENCE ATA	NAME REGIST	
IHFRE	44	√P	1-FREQUENCE1
VFRE	09	√P	J-FREQUENCE 1
VPOS	10	√P	J-SHIFT
VSIZ	1D	√P	J-SIZE
VLIN	07	√P	J-LINEARITY
Vsco	08	√P	;-CORRECTION
HPOS	07	√P	i-PHASE
HSIZ	11	√P	i-SIZE
PAMP	OF	√P	'IN AMP.
CPIN	04	√P	CORNER PIN
PPHA	07	VP	'IN PHASE
VCOM	02	VP	√-COMP
GAMP	17	VP	GREEN AMP.
BAMP	18	VP	BLUE AMP.
GCUT	OD	VP	GREEN CUT OFF
BCUT	09	VP	BLUE CUT OFF
CROM	1B	VP	CHROMA TRAP
SPIX	33	VP	PICTURE
SHUE	23	VP	HUE
SCOL	1C	VP	COLOR
SBRT	3F	VP	BRIGHT
RGBP	1E	VP	RGB PICTURE
MPX	08	AP	ATT
FILO	1B	AP	I1
DEEM	07	AP	I2
STEV	21	AP	OSC1
SAPV	1F	AP	osc2
PILO	08	AP	PILOT
SEP	1B	AP	WIDE BAND
VD	0A	AP	SPECTRAL
LVOL	00	AP	VOLUME-L
RVOL	00	AP	VOLUME-R
SHAR	07	VP	SHARPNESS
DISP	37	VP	PWM OUTPUT

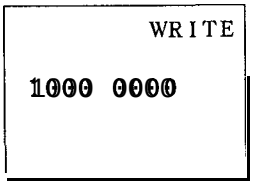
4. METHOD OF CANCELLATION FROM SERVICE MODE

Set the standby condition (Press POWER button on the commander) in the next place, press POWER button again, hereupon it becomes TV mode.

5. METHOD OF WRITE FOR MEMORY

1) Set to Service Mode.
2) Press 1 (UP) and 4 (DOWN), select an item of adjustments.
3) Press MUTING button indicate WRITE) on screen.
4) Press ENTER button to write for memory. (At this time WRITE (YELLOW) is indicated on screen.)

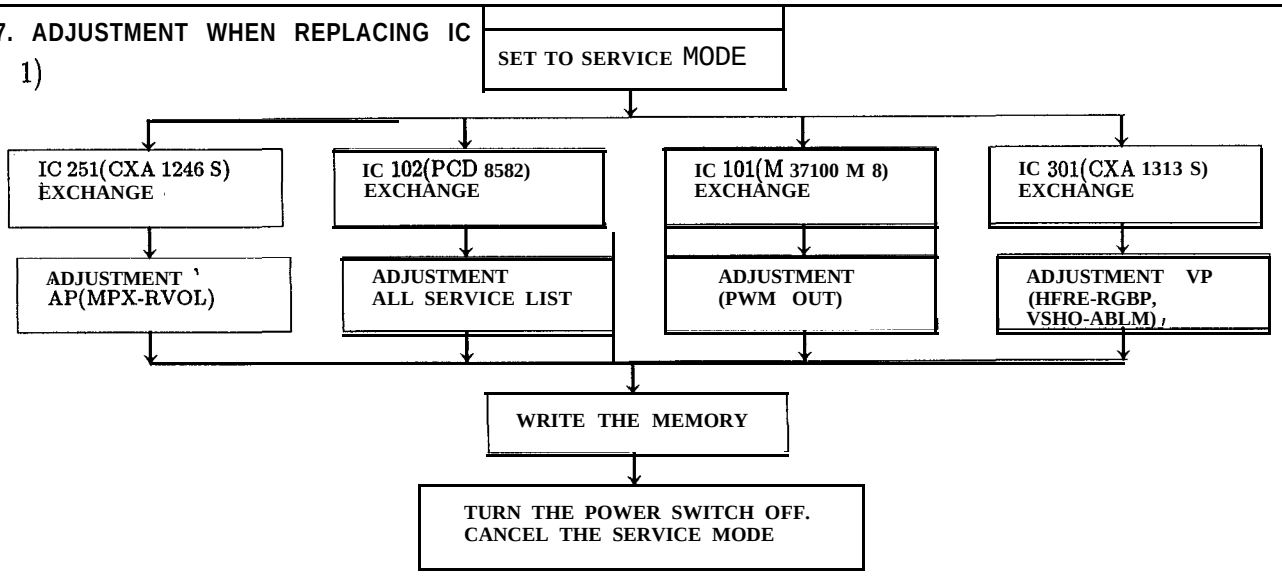
6. MEMORY WRITE CONFIRMATION METHOD



1) After adjustment, pull out the plug from AC outlet, and next place, plug in AC outlet again.
2) Turn the power switch ON and set to Service Mode.
3) Call the adjusted items again, confirm they were adjusted.

7. ADJUSTMENT WHEN REPLACING IC

1)


SET TO SERVICE MODE
IC 251(CXA 1246 S) EXCHANGE
IC 102(PCD 8582) EXCHANGE
IC 101(M 37100 M 8) EXCHANGE
IC 301(CXA 1313 S) EXCHANGE
ADJUSTMENT AP(MPX-RVOL)
ADJUSTMENT ALL SERVICE LIST
ADJUSTMENT (PWM OUT)
ADJUSTMENT VP (HFRE-RGBP, VSHO-ABLM)
WRITE THE MEMORY
TURN THE POWER SWITCH OFF. CANCEL THE SERVICE MODE

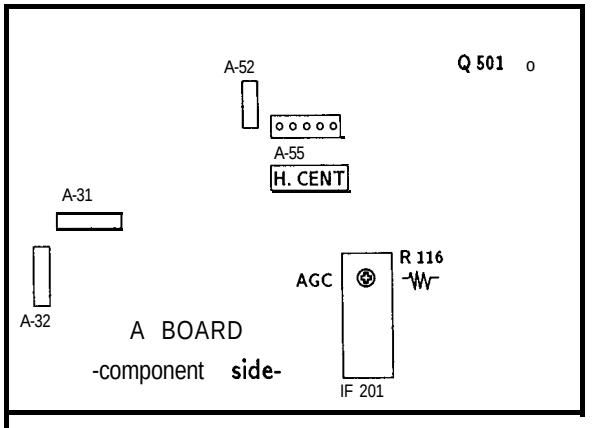
NOTE : If service mode is canceled before writing into memory, the adjustment data is not recorded.
Please write into memory, after adjustment.

2) The following initial setting should always be performed when replacing the IC 102 (PCD 8582).

ITEM	NAME	REGISTER	ADJUSTMENT
VSOM	VP	VSMO	0
AFC	VP	AFC 1.0	0
REF	VP	REF 1.0	2
ROFF	VP	OFF NR	1
GOFF	VP	OFF NG	1
BOFF	VP	OFF NB	1
ABLM	VP	ABLM	1
TEST	AP	T	0
DRGB	VP	DRGB	1

*Please with the memory each items by pressing MUTING → and then press ENTER.

5-2. A BOARD ADJUSTMENTS



RF AGC ADJUSTMENT(IF BLOCK VR)

1) Input a color-bar signal.
2) Adjust AGC VR of IF 201 so that snow noise and cross-modulation disappear from the picture.
3) Confirm them at every channel.

H.FREQUENCY ADJUSTMENT (HFRE)

1) Set to Service Mode.
2) Input a color-bar signal.
3) Connect a frequency counter to base of Q 501.
4) Call the item of AFC, set to 3 level (free run).
5) Select HFRE with 1 and 4.
6) Adjut 3 and 6 to the 15735 ± 60 Hz level.
7) Call the item of AFC again, adjust the level" 00 ".
8) Write into the memory by pressing MUTING then ENTER.

V.FREQUENCY ADJUSTMENT (VFRE)

1) Set the Service Mode.
2) Input an off-air signal (VIDEO IN → no signal).
3) Connect the frequency counter across connector VDY ⊕ of A-52 connector and ground.
4) Select VFRE with 1 and 4.
5) Adjust 3 and 6 to the 56 ±0.5 Hz.
6) Write the memory by pressing MUTING → then ENTER.

CHROMA TRAP ADJUSTMENT (CROM)

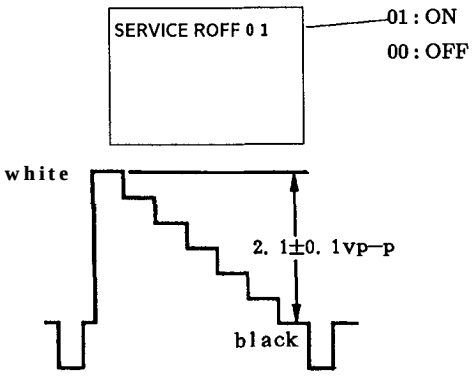
1) Set to Service Mode.
2) Input a color-bar signal.
3) Select NOTCH (VIDEO condition), turn ON by press-ing . And then set the COLOR VR to maximum set-ting position and SHARPNESS control to center.
4) Connect an oscilloscope to pin ① of A-32 connector and ground.
5) Select C ROM with 1 and 4, and then adjust 3.58 MHz (CHROMA) ingredient is minimum with 3 and 6.
6) Write into the memory by pressing MUTING → then ENTER.
7) Set NOTCH to OFF, and make normal condition with VIDEO → then RESET.

SUB CONTRAST ADJUSTMENT (SPIX)

1) Set to Service Mode.
2) Input a color-bar signal. (75 IRE)
3) Set the conditions as follows.

PICTURE	·····	MAX
COLOR	·····	MIN
R OFF	·····	ON
G OFF	·····	OFF
B OFF	·····	OFF

Press [VIDEO] → then [-] (L) (It becomes minimum) .
Select [3] (ON) and [6] (OFF) with [1] and [4].

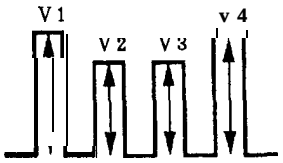


4) Connect an oscilloscope to pin ① of connector A-32 and ground.
5) Adjust [3] and [6] to the 1.7 ± 0.1Vp-p level by select-ing SPIX with [1] and [4].
6) Write the memory by pressing [MUTING] → then [ENTER]
7) Return the following back to normal after adjustment.

G OFF	·····	ON
B OFF	·····	ON
COLOR	·····	CENTER
PICTURE	·····	80%

SUB HUE, SUB COLOR ADJUSTMENT (SHUE, SCOL)

1) Input a color-bar signal.
2) Press [VIDEO] → then [RESET] to normal.
3) Set to Service Mode.
4) Connect an oscilloscope to pin ③ of connector A-32 and ground.
5) Adjust [3] and [4] to the V1=V4 and V2=V3 by select to SHUE and SCOL with [1] and [4].



6) Write into the memory by pressing [MUTING] →then [ENTER]

V.SIZE ADJUSTMENT (VSIZ)

1) Set to Service Mode.
2) Press [VIDEO] → then [RESET] to normal.
3) Input a cross-hatch signal.
4) Adjust [3] and [6] to the best vertical size by selecting VSIZ with [1] and [4] .
5) Write into the memory by pressing [MUTING] →then [ENTER] .

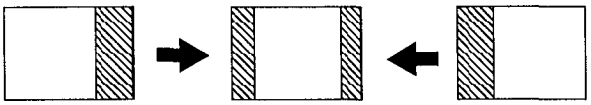
H.SIZE ADJUSTMENT (HSIZ)

1) Input a cross-hatch signal.
2) Press [VIDEO] → then [RESET] to normal.
3) Set to Service Mode.
4) Adjust [3] and [6] to best horizontal size by selecting HSIZ with [1] and [4].
5) Write into the memory by pressing [MUTING] →then [ENTER] .

H.CENTER ADJUSTMENT (H POS)

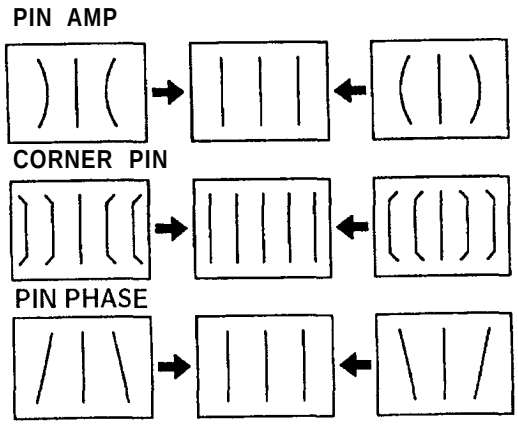
Note: Perform this adjustment after H.FREQUENCY ADJUSTMENT (HFRE) .

1) Input a color bar signal.
2) Set the Service mode.
3) Select HSIZ with 1 and 4 .
4) Press 6 so that the Horizontal size set to min.
5) Adjust A-55 conector position so that both-size branking width of the Raster should be same on the Scrnne.
6) Unplug Set then plug in Set.
7) Set to Service mode.
8) Select HPOS with 1 and 4 .
9) Adjust 3 and 6 so that the color bars center should be set to the CRT Screen center position.
10) White into the memory by the pressing-1 → then ENTER .



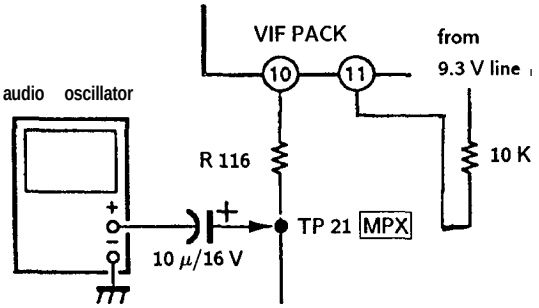
PIN AMP (PAMP) , CORNER PIN (CPIN) AND PIN PHASE (PPHA) ADJUSTMENT

1) Input a cross-hatch signal.
2) Press VIDEO → then RESET to a l .
3) Set to Service Mode.
4) Select PAMP, CPIN and PPHA with 1 and 4.
5) Adjust 3 and 6 to the best picture.
6) Write the memory by MUTING T→ E R] .



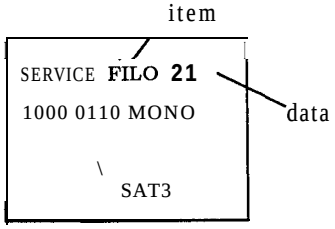
FILTER ADJUSTMENT (MPX, FILO)

1) Set to Service Mode.
2) Select to TEST with 1 and 4, set the data to "1". Then select MPX and change data to "08" .
3) Connect an audio oscillator to R116 using a capacitor (10μ F/16V), set frequency to 62.936 kHz±0.1 kHz.
And then, through the 10kΩ resistor, feed 9.3V into the pin ⑪ of VIF pack.



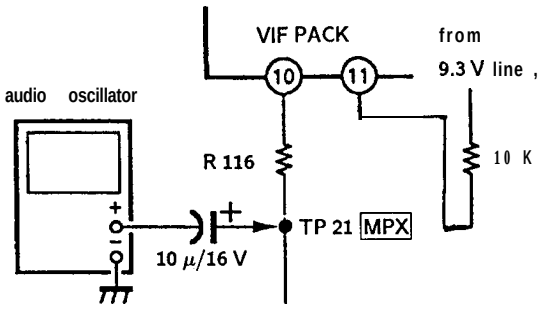
V 4fh : SINE-WAVE 62.936 KHz±0.1 KHz
LEVEL 3.0 Vp-p

4) Make the data "00" by selecting FILO with 1 and 4 And then, send up the data gradually by pressing 6 . Set the data to D1 before SAT3 changing to 1 from 0.
5) Send up the data gradually. Set data D2 when SAT3 changes 0 from 1.
6) Adjust the data of FILO to $\frac{D1 + D2}{2}$.
7) Write into the memory by pressing-1 then ENTER .



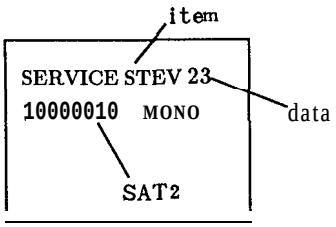
ST VCO ADJUSTMENT (MPX, STEV)

1) Set to Service Mode.
2) Select TEST with 1 and 4, set the data to "1". And then press MTS to MONO.
3) Select MPX, set the data "8" .
4) Connect an audio oscillator to R 116 using electrolytic capacitor (10μ F/16V) and appply the frequency VST. Then, apply DC voltage to pin ⑪ of VIF pack using 10kΩ connect to 9.3V line.



V 4 fh : SINE-WAVE 62.936 KHz ± 0.1 KHz
LEVEL 3.0 Vp-p

5) Select STEV with 1 and 4, set the data to "00" with 6. And then, send up the data gradually. Set the data to D1 before SAT2 changes from 0 to 1.
6) Send up data gradually, set the data to D2 when SAT2 changes 1 from 0.
7) Adjust the data of STEV to .
8) Write into the memory by pressing MUTING → then ENTER.



MPX IN LEVEL ADJUSTMENT (MPX)

1) Set to Service Mode.
2) Select TEST with 1 and 4, set the data to "0" with 6. And then press MTS to MONO.
3) Select MPX with 1 and 4, set the data to "08" with 3 and 6.
4) Write into the memory by pressing MUTING → then ENTER.

[PILOT CANCEL ADJUSTMENT (PILO)

1) Set to the Service Mode.
2) Select TEST with 1 and 4, set the data to "0" with 6. And then press MTS to MAIN.
3) Select PILO with 1 and 4, set the data to "08" with 3 and 6.
4) Write into the memory by pressing MUTING → then ENTER.

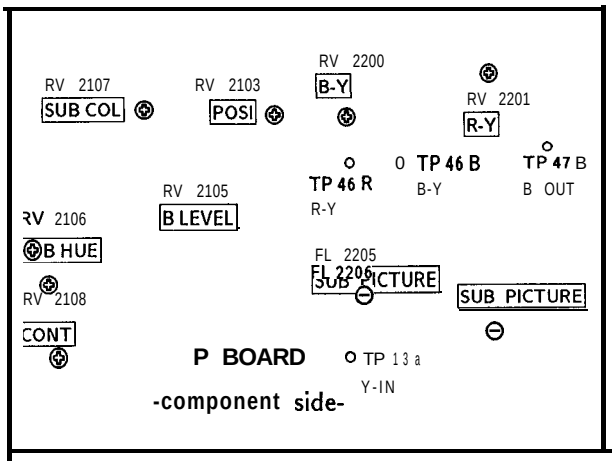
SAP VCO f (ADJUSTMENT (SAPV)

1) Set to Service Mode.
2) Input a stereo broadcast signal with SAP.
3) Select TEST with 1 and 4, set the data to "0" . And then, press MTS to MAIN.
4) Connect a digital multimeter to TP-1(DBX). This voltage reading will equal V 1.
5) Press MTS to SAP and this voltage will equal V 2.
6) Select SAPV with 1 and 4, adjust 3 and 6 so that V 2=V 1±0.03 VDC.
7) Write the memory by ENTER → _____.

SEPARATION ADJUSTMENT (SEP)

1) Set to Service Mode.
2) Press MTS to MAIN and receive a monoral broad -cast signal.
In the next step, receive a stereo broadcast signal.
3) Select SEP and VD with 1 and 4, adjust 3 and 6 so that a clear stereo sound is effected.

5-3. P BOARD ADJUSTMENTS

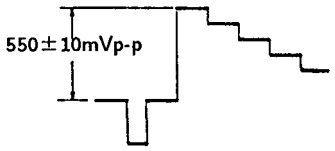


[RF AGC ADJUSTMENT(IF BLOCK VR)

1) Input a color-bar signal.
2) Set to PICTURE IN PICTURE mode.
3) Adjust AGC VR of IF 1201 so that snow noise and cross-modulation disappear from the picture.
4) Confirm them at every channel.

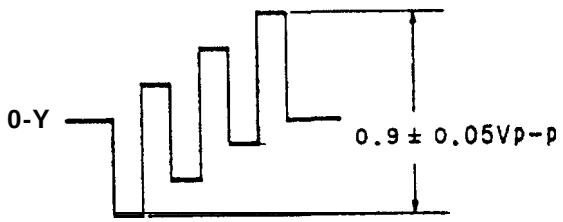
CONTRAST ADJUSTMENT(RV 2108)

1) Input a color-bar signal.
2) Set to PICTURE IN PICTURE mode.
3) Observe signal at TP-13 a an oscilloscope.
4) Adjust RV 2108 (SUB CONT) so that the signal level between white and pedestal becomes 550 ± 10 mVp-p as shown.



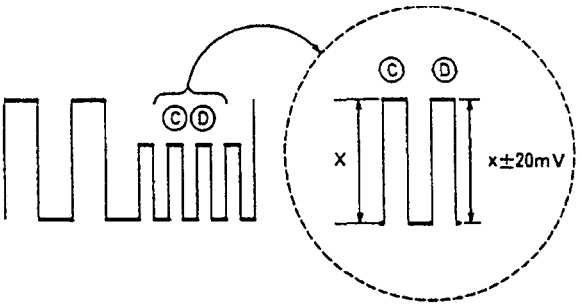
SUB COLOR ADJUSTMENT(RV 2107)

1) Input a color-bar signal.
2) Set to PICTURE IN PICTURE mode.
3) COLOR ····· RESET
   HUE ····· RESET
4) Connect an oscilloscope to TP-47 B.
5) Adjust RV 2107 so that voltage is 0.9 ±0.05 Vp-p.



SUB HUE ADJUSTMENT(RV 2106)

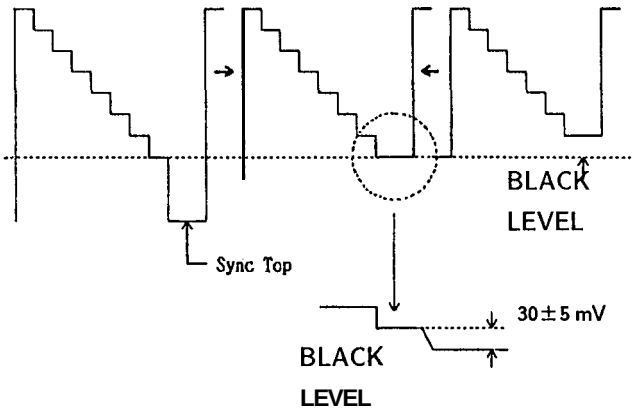
1) Input a color-bar signal.
2) Set to PICTURE IN PICTURE mode.(1/4 SIZE)
3) PICTURE ····· 80%
   BRIGHT ····· RESET
   COLOR ····· RESET
   HUE ····· RESET
4) Connect an oscilloscope to TP-47 B.
5) Adjust RV2106 so that the Ⓒ coincides with Ⓓas shown in figure.



[BRT LEVEL ADJUSTMENT(RV 2105)

1) Input a color-bar signal.
2) Observe PICTURE IN PICTURE mode.
3) Adjust RV 2105(B.LEVEL)so that the signal level between C.B.black level and Sync level becomes same level as shown.

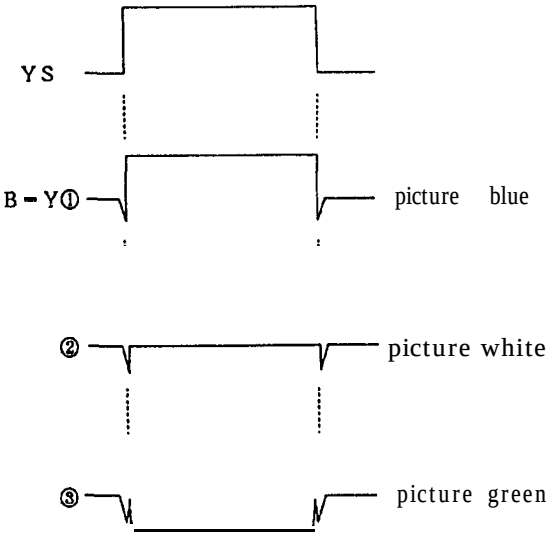
TP-13 a output



A/D OFF SET ADJUSTMENT(RV 2200,2201)

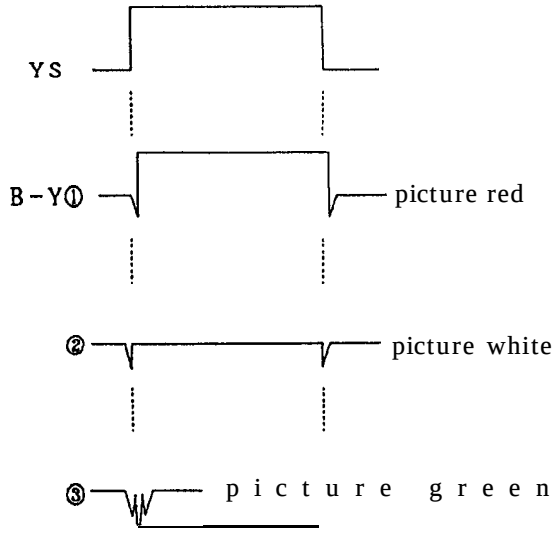
B-Y ADJUSTMENT

1) Input a color-bar signal.
2) Set to PICTURE IN PICTURE mode.
3) Connect an oscilloscope to TP-46 B.
4) Adjust RV 2200 so that the wavefront as shown in figure.



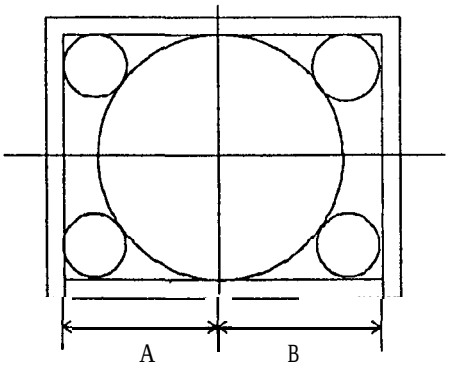
R-Y ADJUSTMENT

1) Input a color-bar signal.
2) Set to PICTURE IN PICTURE mode.
3) Connect an oscilloscope to TP-46 R.
4) Adjust RV 2201 so that the wavefront as shown in figure.



SUB PICTURE ADJUSTMENT(FL 2205,2206)

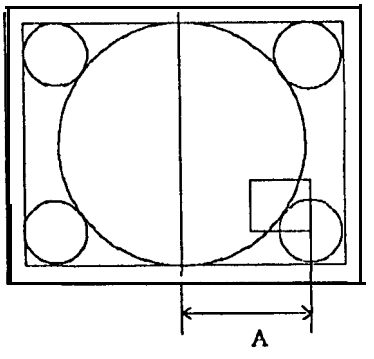
1) Input a monoscope signal.
2) Set to PICTURE IN PICTURE mode.
3) Adjust FL2205,FL2206 so that A and B are same size.



FL-2205=B side
FL-2206=A side

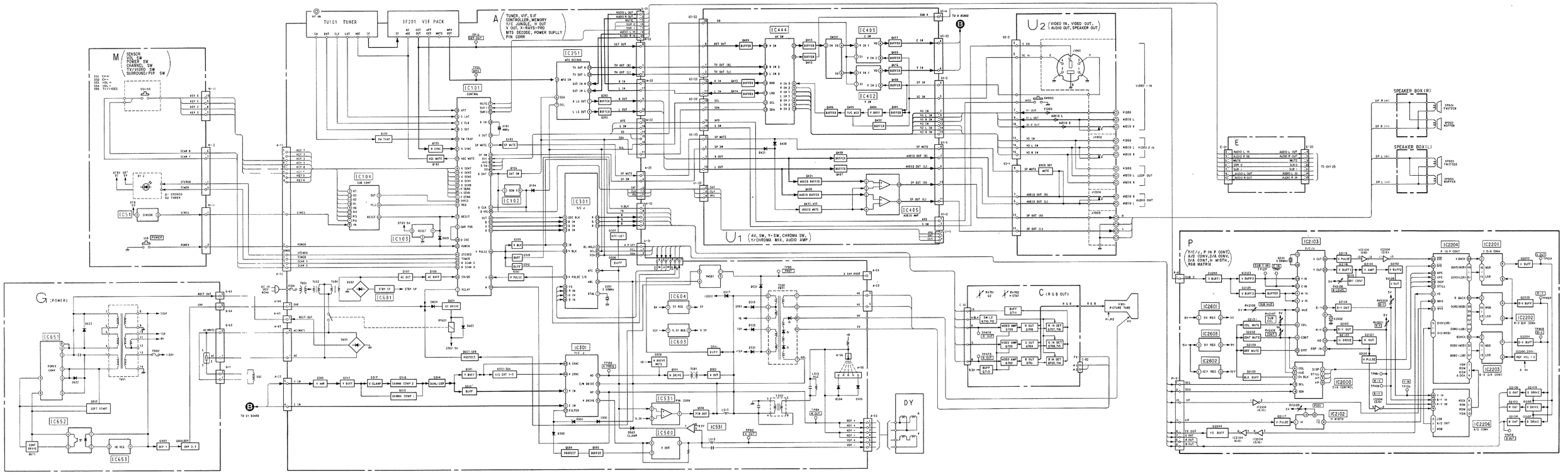
[SUB PICTURE POSITION ADJUSTMENT(RV 2103)

1) Input a cross-hatch signal.
2) Set to PICTURE IN PICTURE mode.
3) Adjust RV 2103 so that the SUB PICTURE is a suitable position.

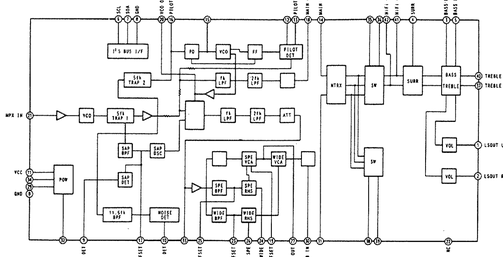


SECTION 6
DIAGRAMS

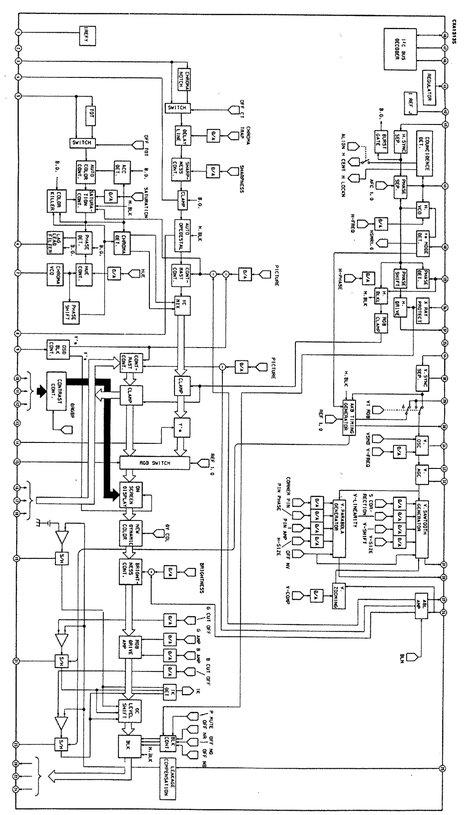
6-1. BLOCK DIAGRAM


TU101 TUNER
IF201 VIF PACK
A (TUNER, VIF, SIF CONTROLLER, MEMORY Y/C JUNGLE, R OUT V OUT, X-RAYS-PRO MTS DECODE, POWER SUPPLY PIN CORR)
M (SENSOR SW, POWER SW, CHANNEL SW, TV/VIDEO SW, SURROUND/PIP SW)
U1 (AV, SW, Y-SW, CHROMA SW, Y/CHROMA MIX, AUDIO AMP)
U2 (VIDEO IN, VIDEO OUT, AUDIO OUT, SPEAKER OUT)
C (RGB OUT)
E
P (Y/C / J, P IN P CONT, A/D CONV, D/A CONV, D/A CONV IN WIDTH, RGB MATRIX)
G (POWER)
IC101 CONTROL
IC104 SUB CONT
IC251 MTS DECODE
IC301 Y/C 2
IC444 AV SW
IC403
IC402 Y SW
IC405 AUDIO AMP
IC2103 Y/C 4
IC2000 D/A CONTROL
IC2102 H WIDTH
IC2206 A/D CONV
IC2201 A/D CONV
IC2202 R-Y D/A CONV
IC2203 B-Y D/A CONV
IC2204 D/A CONV
IC2205 D/A CONV
IC651
IC652
IC653
IC531 PIN CORR
IC500
SPEAKER BOX (R)
SPEAKER BOX (L)
TO A BOARD
TO U1 BOARD
TO CNY-25

A Board IC251 CXA1264AS



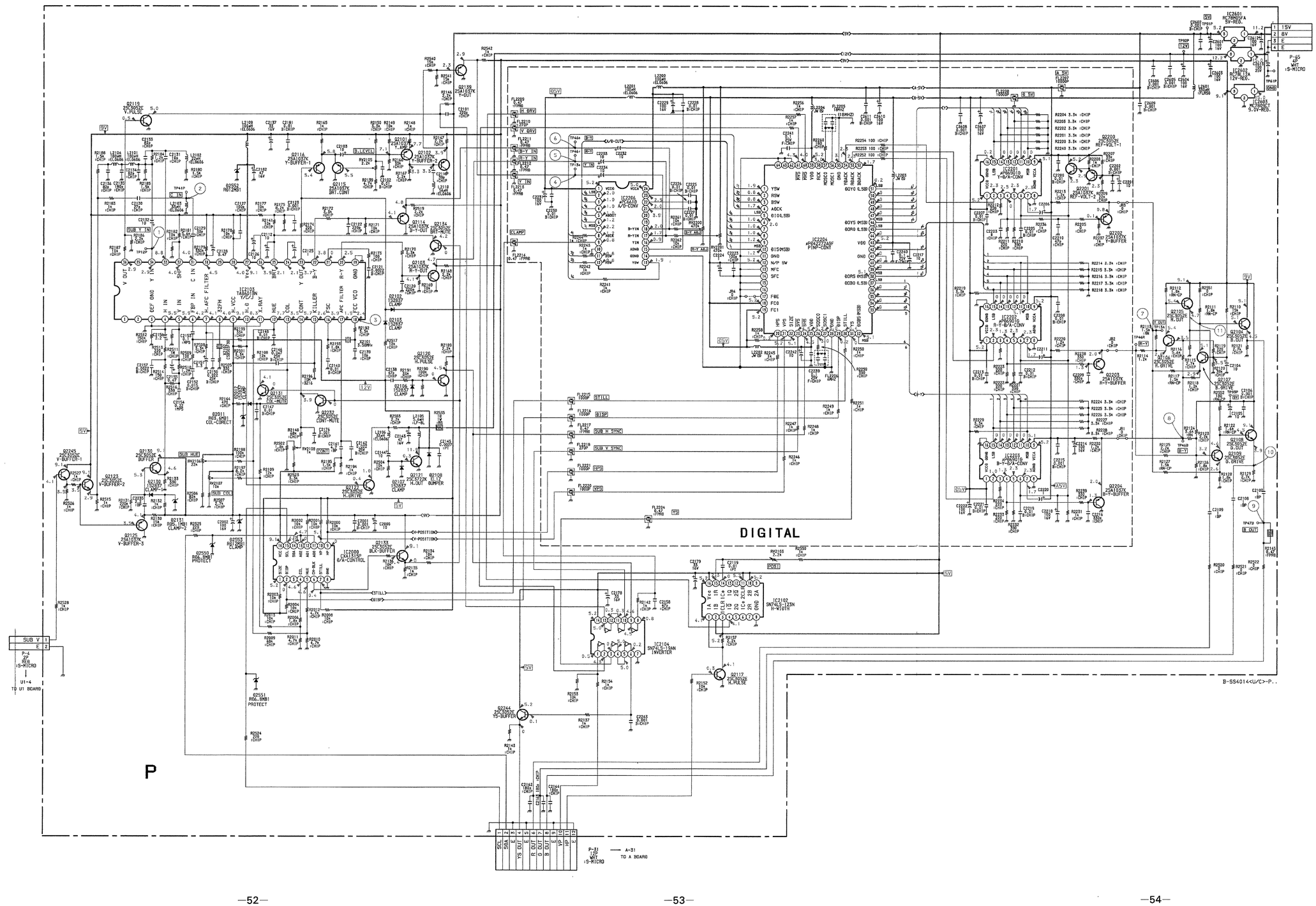
A Board IC301 CXA1313S



A

TUNER, VIF, SIF
CONTROLLER, MEMORY
Y/C JUNGLE, H OUT
V OUT, X-RAYS-PRO
MTS DECODE, POWER SUPLLY
PIN CORR

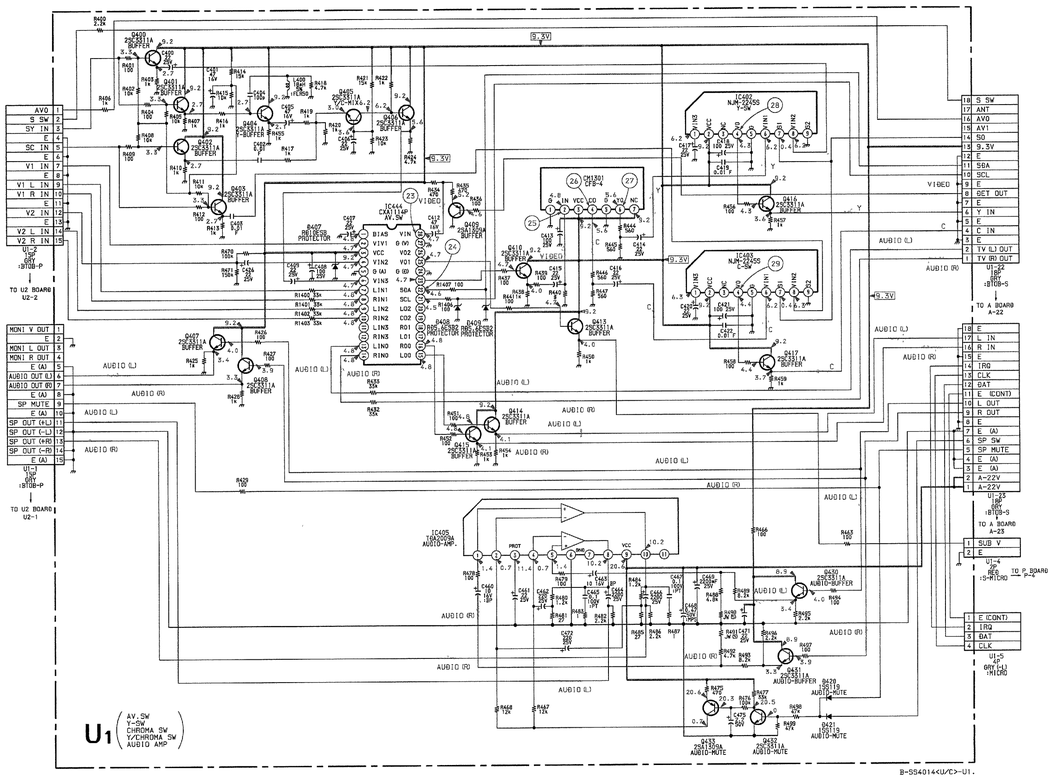
B-SS4014<CU/C>-A..

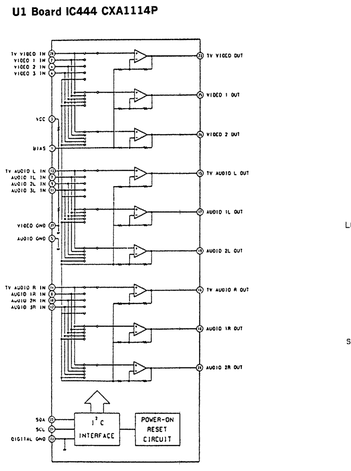


● P Board

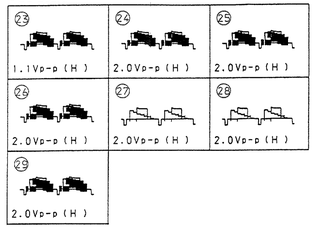
① 0.8Vp-p (H)	② 0.48Vp-p (H)	③ 1.1Vp-p(3.58MHz)
④ 0.8Vp-p (H)	⑤ 0.4Vp-p (H)	⑥ 0.36Vp-p (H)
⑦ 0.8Vp-p (H)	⑧ 0.85Vp-p (H)	⑨ 0.9Vp-p (H)
⑩ 0.9Vp-p (H)	⑪ 1.4Vp-p (H)	

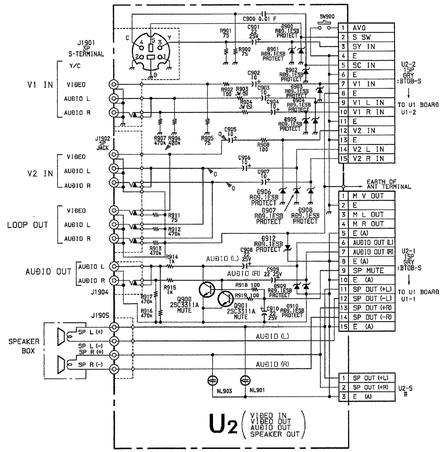
KV-27EXR95 RM-Y111 KV-27EXR95 RM-Y111

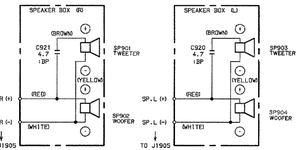


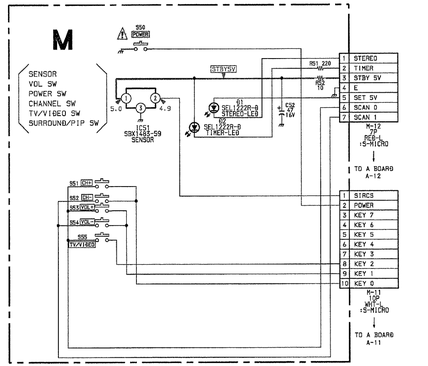


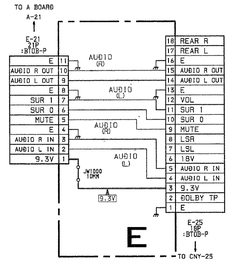
● U1 Board

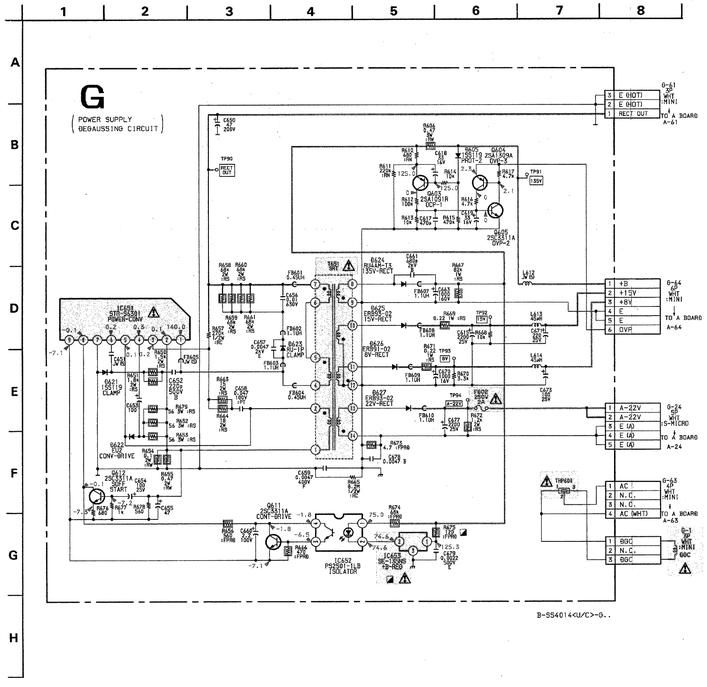










G [POWER SUPPLY DEGAUSSING CIRCUIT]

NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.